**EE CprE SE 491 – MAY1732**

**MicroCART Senior Design Team**

**Weekly Report 4**

**10/3-10/9**

**Faculty Advisers**

Phillip Jones

Nicola Elia

|  |  |  |  |
| --- | --- | --- | --- |
| **Member** | **Position** | **Weekly Hours** | **Total Hours** |
| **Nick Robbins** | **Team Leader** | **16** | **34** |
| **Ben Nelson**  | **Key Concept Holder** | **13** | **15.5** |
| **Jake Frazier-Flores** | **Webmaster** | **7** | **14.5** |
| **Grant Manley** | **Key Concept Holder** | **8.5** | **16** |
| **Chengrui Yang** | **Key Concept Holder** | **5.5** | **11** |
| **Cole Beaulieu** | **Communicator** | **11** | **29** |
| **Tianxiang Shen** | **Key Concept Holder** | **4.5** | **10** |

**This Week’s Progress**

1. Quads/Camera System
* Further investigated how the radios transmit information to the quads, and discovered how the radios are able to receive info and have the capability to transmit
* Looked into capabilities of quad to quad communication
* Compiled a list of 10 different quad frames for the group to go through and decide for our intermediate quad design
1. Ground Station
* Set up personal VM’s and are using them to try and run Crazyflie client software and so we can use the radios without the crazy flie client software and make changes that way
* Experimented with the No ACK idea
* Experimented with turning on the DEBUG in the CCrazyflieRadio and used it help us
* Looked into options to change the communication protocol, and understood how the stack works and how to further implement the changes that we want to make.

**Pending Issues**

1. Connecting to the client of Crazyflie’s latest firmware
2. Implementing No ACK without USB timing out
3. Minimizing switching time between quads and camera system
4. Learning to address the 6 different addresses of the quads

**Plan of Action**

1. Cole – Meet with the radio team and help better understand how radios work using crazyflie client and continue to work on that, meet with comm tean when I can. Determine a frame and then order it and with that determine ESC and motors and order them by the end of the week.
2. Nick – See if no ack and no buffer improve communication and flash newest firmware to the crazy flies to enable addressing.
3. Jake – alter the communication protocol to enable addressing and continue brainstorm how to improve it and try out ideas
4. Grant – keep expierementing with the crazyflie client software and flash newest firmware
5. Chengrui ­– working with cole to help find ESC and motors, better understand the code
6. Tianxiang - working with cole to help find ESC and motors, better understand the code
7. Ben – get the crazyflie client working and be able to use it to allow us to mess with the radio software independent of the groundstation.

**Contributions**

Cole:

* Monday: 3 hours – meeting and looking into expansion board, motors and ESCs
* Tuesday (.5 hrs) : going over communication protocol with the communications team.
* Wednesday (3 hrs): Met with radio comm team, and continued to look into hardware
* Thursday 3.5 hrs – put together hardware choice document (frames) and group meeting
* Sunday 1 hr– weekly report

Nick:

* Monday 3 hrs: meeting, hardware
* Tues: 4 hrs comm group meeting: figuring out communication capabilities and learning about stack, put together google presentation
* Wednesday: 4 hrs radio comm team meeting, learning capabilities and just general learning
* Thursday 5 hrs: eliminating the ACK in the ground station code, as well as whole group meeting

Grant:

Monday: 2 hours for group meeting and technical research

Tuesday: 3 hours for communication research and testing new communication protocol with python

Friday: 2 hours for setting up personal VM to test different python code and C++ code for ground station

Saturday: 1.5 hrs helped Ben with wiki on python code

Jake:

Monday: 2 hours – researched CRTP structure and attended team meeting

Tuesday: 2 hours – worked with comm protocol team on research and installing a working crazyflie command center

Thursday: 3 hours – researched how the specifics of the radio communication and continued trouble shooting instilling a working command center and team meeting.

Ben:

Monday (2 hours) – group meeting, working to understand firmware code base

Tuesday: 1 – researching radio

Wednesday: 6 hrs – radio research, group meeting, tried to build the python pc client, expiment/understanding with ground station code.

Thursday: 3 – more work on python pc clinet

Saturday: 1 – phython pc client

Tianxiang Shen:

Weds: 2 hrs: reviewed parts and expansion deck, and reviewed feedback from Dr. Jones

Thursday: 2.5 hrs: suggested by cole to work finding motors with Roy and our group meeting

Chengrui:

Tuesday: 1 hr: worked on the models and the parts for the expansion board and parts fitting for the expansion board

Wednesday: 2 hours: saw the feedback from Prof. Jones and fixed ideas for new models

Thursday: 2.5 hours, cole suggested working on finding motors and ESCs with Jesse, and group meetings

**Meeting Minutes**

* Will be filled out on Monday